[Billing Code 4140-01-P]

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, HHS.

ACTION: Notice.

SUMMARY: The inventions listed below are owned by an agency of the U.S. Government and are available for licensing in the U.S. in accordance with 35 U.S.C. 209 and 37 CFR Part 404 to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

FOR FURTHER INFORMATION: Licensing information and copies of the U.S. patent applications listed below may be obtained by writing to the indicated licensing contact at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, Rockville, Maryland 20852-3804; telephone: 301-496-7057; fax: 301-402-0220. A signed Confidential Disclosure Agreement will be required to receive copies of the patent applications.

SUPPLEMENTARY INFORMATION: Technology descriptions follow.

Interactive Clinical Protocol Services Software

Description of Technology: The invention pertains to a C/C++ and C sharp application toolkit named (Interactive Protocol Services) iPS that loads into the Allscripts HealthCare System as a Dynamic Link Library (DLL). The application provides users with a GUI that opens into a window of one of the SCM's tabs. The toolkit could be rendered compatible with any off-the-shelf healthcare system that allows loading library files. The toolkit provides healthcare professionals with a custom structure language to be used in designing customized layouts and accessing data sources within the patient care. This custom structure language is provided to iPS during the COTS (e.g., SCM) application startup process or during an interface communication transaction. Usually, the custom structured language or design layout is stored in the COTS application database system and is retrieved during the startup process of iPS. The custom structure language instructs iPS in how to build and manipulate defined User Control Widgets through properties. These defined User Control Widgets are created in object pairs. These object pairs can be accessible through the iPS application/DLL. iPS also contains a nested list of layout controls that place the User Control Widgets at certain coordinates on the display screen. Each User Control Widget contains code events that allow it to respond to user-defined events, actions, web commands and SQL procedure calls.

Potential Commercial Applications:

• COTS healthcare system

• Medical/hospital information systems

Competitive Advantages:

• Customized views

• Integrates into exiting management tool libraries

Development Stage:

• Early-stage

• Prototype

Inventor: Steven D. Moore (NIH-CC)

Intellectual Property: HHS Reference No. E-172-2014/0 – Software. Patent protection is not being pursued for this technology.

Licensing Contact: Michael Shmilovich, Esq., CLP; 301-435-5019; shmilovm@mail.nih.gov

Collaborative Research Opportunity: The NIH Clinical Center is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate or commercialize Interactive Clinical Protocol Services Software. For collaboration opportunities, please contact Eric Cole at colee@cc.nih.gov or 301-451-4430.

Non-Contact Total Emission Detection Methods for Multiphoton Microscopy: Improved Image Fidelity and Biological Sample Analysis

Description of Technology: The technology offered for licensing and for further development is in the field of multiphoton microscopy (MPM). More specifically, the invention pertains to optical designs that can enhance and extend the capabilities of MPM

in spectral imaging of biological samples. The unique design of the light collection and the detection optics maximizes the collection of emitted light, thus increasing the signal and hence the signal-to-noise ratio (SNR). Improvement in image fidelity will result in improved analysis of biological samples and thus will favorably impact medical research and possibly clinical diagnosis. The present technology is a further improvement on the TED (Total Emission Detection) technology, first disclosed by Dr. Robert Balaban et al. at the NIH in 2006 and claimed in US Patent 7,667,210 (issued February 23, 2010). The earlier NIH TED technology proposed an optical design based on enveloping the entirety of a small sample in a parabolic mirror/condenser combination so light emanated by a sample in all directions is redirected to the detector. The present technology further expands the capabilities of TED as its unique design employing parabolic, toric and conic mirrors ensures maximum light collection from large samples in cases where there is only access to one side of the tissues (e.g., in vivo or ex vivo). This is accomplished by the redirection of all attainable light (i.e., light escaping the tissue or a whole animal in the epi and sideway directions) to the detector.

Potential Commercial Applications:

• Tissue and cell analysis in biomedical research

• Potential applications in clinical diagnostics

Competitive Advantages:

• Increased signal-to-noise ratio

• Enhanced image resolution due to SNR

• Improved analytical capabilities

• Non-contact

• May readily be adaptable to commercial microscopes

Development Stage:

• In vitro data available

• Prototype

Inventors: Jay R. Knutson, Christian A. Combs, Robert S. Balaban (all of NHLBI)

Publications:

1. Combs CA, et al. Optimization of multiphoton excitation microscopy by total emission detection using a parabolic light reflector. J Microsc. 2007 Dec;228(Pt3):330-7. [PMID 18045327]

2. Combs CA, et al. Compact non-contact total emission detection for in vivo multiphoton excitation microscopy. J Microsc. 2014 Feb;253(2):83-92. [PMID 24251437]

3. Combs CA, et al. Optimizing multiphoton fluorescence microscopy light collection from living tissue by noncontact total emission detection (epiTED). J Microsc. 2011 Feb;241(2):153-61. [PMID 21118209]

Intellectual Property: HHS Reference No. E-236-2009/0 -

• US Provisional Patent Application 61/224,772 filed July 10, 2009

• US Patent 8,759,792 issued June 24, 2014

• European Patent Application 10797972.6 filed July 12, 2010

Related Technology: HHS Reference No. E-257-2005/0 - US Patent 7,667,210 issued February 23, 2010

Licensing Contact: Michael Shmilovich, Esq., CLP; 301-435-5019; shmilovm@mail.nih.gov

Collaborative Research Opportunity: The NHLBI Laboratory of Molecular Biophysics is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize an enhanced method of multiphoton microscopy that is suitable for the spectral imaging of biological samples. Please contact Brian W. Bailey, Ph.D. at bbailey@mail.nih.gov for more information.

Dated: July 7, 2014.

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Richard U. Rodriguez,
Director,
Division of Technology Development and Transfer,
Office of Technology Transfer,
National Institutes of Health.

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